

Claim PTO/tw

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1. (Amended) A method of processing a telephone call from a calling station to a called station that is busy as a result of having established a connection to a data network via an enhanced telephone switching system of the public switched network, said enhanced telephone switching system including a switching capability, a data network access capability for establishing said connection from said called station to said data network, and a call notification capability for alerting a subscriber at said called station to receipt of said call from said calling station via said connection to said data network, said method comprising the steps of

receiving said call at said enhanced telephone switching system and, responsive to said called station being busy, said enhanced telephone switching system sending a message to said called station via said connection to said data network to alert said subscriber at said called station to the receipt of said call, and

said enhanced telephone switching system connecting said calling station to said called station via said connection to said data network so that a caller at said calling station may communicate with said subscriber at said called station.

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2. The method of claim 1 wherein said enhanced telephone switching system includes an access server for establishing connections to said data network.

3. The method of claim 1 wherein said step of connecting said calling station includes the step of,

responsive to receiving from said called station via said connection a message containing a request to answer said call, then performing said step of connecting.

4. The method of claim 1 wherein said step of connecting said calling station includes the step of multiplexing signals received from said calling station and signals received from said data network and addressed to said called station over said connection to said called station.

5. The method of claim 1 wherein said step of connecting said calling station includes the step of routing data signals received from said called station via said connection

to said data network and routing voice signals received from said called station via said connection to said calling station.

6. The method of claim 3 wherein said step of connecting said calling station includes the step of, responsive to said message from said called station containing a request to connect said call from said calling station to an alternate telephone number, then routing said call to said alternate telephone number.

7. The method of claim 3 wherein said step of connecting said calling station includes the step of, responsive to said message from said called station containing a request to set up a three-way call connection between the called station, the calling station and a station currently connected to the called station, then setting up said three-way call connection.

8. The method of claim 1 wherein said step of connecting said calling station includes the step of, responsive to a message from said called station containing a request to not answer said call from a calling station, then not answering said call.

9. The method set forth in claim 1 wherein said data network is an Internet network further comprising the steps of
responsive to receiving an initial call from said called station at said enhanced telephone switching system, connecting said initial call to said Internet.

determining if said subscriber also subscribes to a call waiting service, if so, then activating said call waiting service.

10. The method of claim 9 wherein said step of activating includes the step of sending a message to said called station via said connection to notify said called station that said activation has been executed.

11. The method of claim 9 wherein if said subscriber does not subscribe to said call waiting service, then offering said call waiting service for the duration of said Internet connection, and
performing said activating step if said subscriber elects to accept said service offer.

12. The method of claim 11 wherein said step of activating includes the step of sending a message to said called station via said connection to notify said called station that said activation has been executed.

13. The method of claim 1 wherein said data network is a public network such as the Internet.

14. The method of claim 1 wherein said data network is a private network such as an intranet.

15. (Amended) A method of processing a call waiting feature for a first telephone station set whose telephone line is connected to the Internet comprising the steps of
responsive to receiving at an enhanced telephone switching system of the public switched network, an initial call from said first telephone station, extending a connection from said first telephone station to said Internet,

receiving at said enhanced telephone switching system a voice call from a second telephone station directed to said first telephone station, and, responsive to said first telephone station being connected to said Internet, said enhanced telephone switching system sending a data message via said connection to said first telephone station to alert a subscriber to receipt of the voice call from said second telephone station, and

said enhanced telephone switching system bridging a connection to said second telephone station with the connection between said Internet and said first telephone station so that a caller at said second telephone station may communicate with said subscriber at said first telephone station,

wherein said enhanced telephone switching system includes a switching capability, an Internet access capability for extending said connection from said first telephone station to said Internet, and a voice call notification capability for alerting said subscriber at said first telephone station to receipt of said voice call from said second telephone station via said connection to said Internet.

16. The method of claim 15 wherein said enhanced telephone switching system includes an access server for extending connections to said Internet.

17. The method of claim 15 further comprising the steps of
responsive to receiving from said first telephone station a message containing a request to answer said voice call, performing said step of bridging.

18. The method of claim 15 wherein said step of bridging said second telephone station includes the step of multiplexing voice signals received from said second telephone station and data signals received from said Internet and addressed to said first telephone station over said connection to said first telephone station.

19. The method of claim 15 wherein said step of bridging said second telephone station includes the step of routing data signals received from said first telephone station via said connection to said Internet and routing voice signals received from said called station via said connection of said calling station.

20. The method of claim 17 wherein said step of bridging said second telephone station includes the step of, responsive to receipt of said message from said first telephone station containing a request to forward said voice call from said second telephone station to an alternate telephone number, then routing said call from said second telephone station to said alternate telephone number.

21. The method of claim 17 wherein said step of bridging said second telephone station includes the step of, responsive to receipt of said message from said first telephone station containing a request to set up a three-way call connection between said first telephone station, said second telephone station and a third telephone station currently connected to said first telephone station, then creating said three-way call connection.

22. The method of claim 15 wherein said step of connecting said calling station includes the step of, responsive to a message from said first telephone station containing a request to not answer said voice call from said first telephone station, then not answering the voice call.

23. The method set forth in claim 15 further comprising the steps of responsive to connecting the initial call to said Internet, determining if a subscriber associated with said first telephone station also subscribes to a call waiting service, if so, then activating said call waiting service.

24. The method of claim 23 wherein if a subscriber associated with said first telephone station does not subscribe to said call waiting service, then offering to activate said call waiting service for the duration of said Internet connection, and performing said activating step if said subscriber elects to accept said service offer.

25. The method of claim 24 wherein said step of activating includes the step of sending a message to said first telephone station via said Internet connection to notify said subscriber that said activation has been executed.

26. (Amended) A method of processing a three-way calling feature for a first telephone station set whose telephone line is connected to the Internet, comprising the steps of

responsive to receiving at an enhanced telephone switching system of the public switched network an initial call from said first telephone station, extending a connection from said first telephone station to said Internet,

receiving at said enhanced telephone switching system a voice call from a second telephone station directed to said first telephone station and, responsive to said first telephone station being connected to said Internet, said enhanced telephone switching system sending a data message via said connection to said first telephone station to alert a subscriber to the receipt of the voice call from said second telephone station, and

said enhanced telephone switching system bridging a connection to said second

telephone station to the connection between said Internet and said first telephone station so that a caller at said second telephone station may communicate with said subscriber at said first telephone station, then

responsive to receiving at said enhanced telephone switching system a voice call from a third telephone station directed to said first telephone station while said first telephone station is connected to said second telephone station, said enhanced telephone switching system bridging connections to said second telephone station and said third telephone station to a three-way conference circuit, and said enhanced telephone switching system bridging said three-way conference circuit to the connection between said Internet and said first telephone station,

wherein said enhanced telephone switching system includes a switching capability, an Internet access capability for extending said connection from said first telephone station to said Internet, and a voice call notification capability for alerting said subscriber at said first telephone station to receipt of said voice call from said second telephone station via said connection to said Internet.

27. The method of claim 26 wherein said step of bridging connections comprises the steps of,

responsive to receiving said voice call from said third telephone station at said enhanced telephone switching system, sending a data message via said Internet connection to said first telephone station to alert a subscriber thereof to the receipt of the voice call from said third telephone station, and

responsive to receiving from said first telephone station via said Internet connection a message containing a request to three-way answer said voice call, performing said step of bridging connections.

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